

Enforcement/Compliance Roundtable
Discussion Summary:
Madison-Swanson and Steamboat Lumps
Marine Protected Areas

Panama City Beach, FL
May 15-16, 2003

Introduction

Dail Brown, Director of the Ecosystem Assessment Division, National Atmospheric Administration (NOAA) Fisheries Office of Habitat Conservation.

The purpose of the meeting was to have an informal discussion of the issues surrounding enforcement of no-take reserves in general and of Madison-Swanson and Steamboat Lumps in particular. The meeting took place in three parts with each section moderated by an individual experienced in the area: **Compliance Monitoring** - Jim Weaver, **Enforcement** – Dave McKinney and **Outreach/ Education** – Gino Freselli

Background

Objectives of Madison Swanson and Steamboat Lumps

Steven Atran, Gulf of Mexico Fishery Management Council (GMFMC) Biologist.

Until this year, the National Marine Fisheries Service (NMFS) had listed gag as approaching an overfished condition. In 1997, the Council's Reef Fish Stock Assessment Panel (RFSAP) described a number of concerns that they had over the practice of fishing on gag grouper spawning aggregations. These included an increased focus of the fishery on large breeders, a decrease in the proportion of males in the population (gag are protogynous hermaphrodites that start out as females and switch to males later in life), disruption to the social structure of spawning groups, and the complete loss of some spawning aggregations to fishing pressure. In an effort to resolve these problems on the Gulf Coast the GMFMC proposed the closure of a 423 square nautical mile area of gag spawning to all reef fish fishing and bottom gear capable of catching reef fish. Due to strong protests from fishermen, both recreational and commercial, over the large size of the reserve, the area was reduced to two smaller areas of slightly over 100 nautical square miles each, Madison-Swanson (high relief area) and Steamboat Lumps (low relief area). Within these areas the Council proposed prohibiting all fishing under its jurisdiction, and a request was sent to the Highly Migratory Species (HMS) Division of NMFS to implement a similar closure for the species under their jurisdiction (billfish, swordfish, sharks, tunas).

The Council's request to the NMFS HMS Division resulted in a legal challenge from the Coastal Conservation Association (CCA), which felt it unnecessary to ban surface trolling for highly migratory pelagic species in order to protect reef fish. As part of a settlement to the legal challenge, NMFS agreed to hold the Council's request in abeyance while research was conducted into a number of questions dealing with HMS fishing, including whether surface trolling for HMS species impacts reef fish, and whether it is possible to enforce fishing regulations by depth of fishing. These questions are currently under investigation with the help of NMFS scientists (particularly Andrew David of the Panama City NMFS Laboratory).

Specific objectives of reserves:

- Stop overfishing of gag
- Protect gag spawning aggregations
- Protect and rebuild the male gag population
- Evaluate the utility of marine reserves as a management tool

Summary of NMFS presentation to the Gulf Council on Status of Fishery Resources in North East Gulf Reserves

Andrew David, National Marine Fisheries Service Fishery Biologist

NMFS is evaluating habitat and reef fish changes over time in Madison-Swanson and Steamboat Lumps. Objectives of the study:

- Establish baseline estimates of fish abundance
- Map and describe habitat features
- Track changes in reef fish distribution and abundance through closure period
- Locate spawning aggregations of groupers and snappers
- Determine the age structure and reproductive status of groupers and snappers
- Compare marine protected areas (MPAs) with open to fishing areas.

Conclusions of the study to date with a precautionary note, results from two years of data should not be considered a trend:

- Grouper and snapper are associated with hard bottom features in both study areas. In general, abundances were greater within Madison-Swanson than in Steamboat Lumps.
- Spawning aggregations of gag and/or scamp confirmed at several sites within Madison-Swanson during February-March in 2001 and 2002.
- Some changes in abundance estimates between years were noted, with a general trend of more reef fish seen in 2002 than in 2001. Within Madison-Swanson, the abundance of red grouper, gag, and scamp increased. Within Steamboat Lumps, an increase in abundance was noted for red grouper and scamp.

Concerns associated with the study

- Fishing activity was a significant problem in both eastern Gulf MPAs in 2001-2002.
- Enforcement is difficult due to remote location and reprioritization of United States Coast Guard (USCG) resources, although reconnaissance flights have recently increased.
- Information on compliance levels, added to the current data on fish abundance and distribution, would improve the confidence in the evaluation of this test of the Marine Reserve concept as a management tool to rebuild fish stocks.
- Gag are long-lived fish, with only 10% male by age 7. Thus many years of protection may be required before a significant change is seen at the population level.

Compliance Monitoring

Jim Weaver, Assistant Regional Administrator for Sustainable Fisheries

Questions on the agenda addressed during this section of the roundtable.

1. *What do we know about the current levels of compliance? What anecdotal information exists concerning non-compliance?*

- There is a level of compliance, but what that level is, and if that is an acceptable level is unknown. Andy David and Chris Koenig have seen fewer vessels fishing in the closed area each year in the three years that they have been going out to survey the area, but this is only 20-25 days per year. It was suggested that we might need a new set of tools to get to the next step.
- Initial opposition to the closed areas has turned to support among many of the commercial and charterboat fishermen as they are seeing benefits from the spillover effect.
- Awareness of the reserves appears to be low among recreational anglers
- The perception is that these area closures are working to increase grouper stocks, but it is too soon for the science to confirm this. These species are long lived and more time will required before the apparent trends can be confirmed.

2. *What options do we have for improved compliance monitoring?*

Potential options for improving compliance monitoring and/or enforcement:

- Shore Based Radar (example of a radar unit based at Cape San Blas, Florida)
 - PROS: Low cost, easy maintenance, real time observations
 - CONS: No Steamboat Lumps coverage, edge of range for Madison-Swanson
- Buoy Based Radar / Visual
 - PROS: Precise coverage, positive identification
 - CONS: Not real time, have to retrieve data at sea, costly maintenance
- Aerial Surveillance
 - PROS: Precise coverage, positive identification
 - CONS: Very limited temporal coverage, high cost
- Autonomous Sub-surface Hydrophones or 'pop-up' buoys which radio in when they detect a target vessel
 - PROS: Real time notification, very stealthy
 - CONS: Limited battery life, high algorithm development cost
- Integrated Seabed Hydrophone Array uses an array of hydrophones on the bottom linked to a central surface buoy which radios in the presence of detected vessels
 - PROS: Real time notification, moderate stealth
 - CONS: Limited battery life, tied to surface buoy
- Mandatory vessel monitoring systems (VMS) for Violators. (NB: The violator only clause was suggested by a commercial fisherman who did not want to see a universal application of VMS in the fleet, but suggested it as an alternative punishment for proven violators)
 - PROS: Only impacts known violators, minimal cost to government
 - CONS: Tampering, new violators unaffected
- Mandatory VMS for certain groups of vessels, e.g., commercial reef fish vessels
 - PROS - Minimal initial cost to government, positive identification
 - CONS - Extra cost to fishermen, no coverage for vessels not in the selected groups
- Mandatory VMS for all vessels
 - PROS – Knowledge of true level of compliance, safety and security

- benefits for personal life as well as homeland security
 - CONS – Monitoring costs, extra costs to user groups
- Buoy MPA Boundaries
 - PROS: No “Ignorance excuses”, low maintenance
 - CONS: Passive, relies upon good-faith compliance

General considerations: The various radar options incur substantial monitoring costs. Well-trained personnel are needed to man the receiving station, including nights and weekends, interpret the results and relay the information to the appropriate parties. With the buoy options, radioing the signals to shore on a regular basis requires a generator on the buoy, increasing both the size and cost of the buoy, and incurs the costs associated with at-sea maintenance, refueling, etc.

3. *What are contributing factors to support deterrence and/or compliance?*

- It was suggested that the \$80,000 fine levied recently against the owner of a vessel caught illegally fishing in the Madison-Swanson reserve may make a difference.
- Most commercial boats have radars. These anglers could be our eyes, but how many of those are reporting fellow anglers? VHF radio notification may reveal the identity of reporters to the violators. This method of compliance does not seem to be working.
- Have a call-in program, where an HMS vessel would have to call NMFS and notify them that it would be fishing in the reserve.
- Put posters in tackle shops to inform fishermen about the closed areas.

Options that were put forth by the group for improving compliance included:

- Requiring operator permits. They do this in the Northeast and the Gulf has it for shrimp
- Distributing posters about the reserves to the public
- Providing flyers about the reserves to anyone who gets a permit
- Closing the reserves to all fishing

Enforcement

**Dave McKinney, Deputy Special Agent in Charge Office of Law Enforcement
Southeast Division, Moderator**

Questions on the agenda addressed during this section of the roundtable.

1. *What enforcement activities are currently being conducted?*

- The 41-foot vessels out of Panama City are limited to a range of 30 miles, partly because of safety concerns. The 87-foot vessels in Carabelle and Panama City can get out to the reserves, however.
- USCG overflights only report vessels that appear to be fishing illegally.

- Only some of the homeland security air patrols go directly over the reserves. Other tracks may detect vessels over the horizon with radar, but there is no visual identification of what kind of vessels those are, or what operations they are conducting.

2. *Given the limitations on resources, what options are available to improve on-site enforcement activities? What has NOAA/Office of Law Enforcement (OLE) already recommended?*

- Enforcement is difficult due to remote location and reprioritization of USCG resources, although reconnaissance flights have recently increased
- In order to achieve compliance, these areas need to be examined:
 - Factors that influence compliance
 - Potential for illegal gain
 - Severity of penalty and certainty of sanctions
 - Perception of the necessity and justness of rule (closed area)
 - Social pressures – self policing

What makes an MPA enforceable – USCG perspective

- Square or Rectangular in shape
- Bigger the better
- Boundaries delineated by latitude and longitude
- Acceptable format for NOAA Charts
- Acceptable activities limited
 - ◆ No transit best – safety issues
 - ◆ Prohibit all fishing – ideal
- Located away from highly populated areas to reduce false alarms due to misidentified normal vessel traffic
- On-site enforcement capability
 - ◆ VMS/Radar/remote cameras/acoustics/etc
 - ◆ Locate near enforcement resources

3. *What is currently being done by the Gulf of Mexico Fishery Management Council to foster protection while enhancing compliance?*

- The workshop participants discussed the use of requiring VMS. VMS can identify specific vessels operating in the reserves without the need to send an enforcement vessel out to intercept the vessel. However, vessels that violate fishing or transiting rules within the reserves may not be equipped with VMS and may not have the necessary commercial or recreational permits. Thus, a VMS requirement would cost law-abiding fishermen but would not necessarily result in apprehending violators.

4. *What are the penalties for violations of MPA regulations? How many violators have been apprehended over the past two years?*

- Penalties are outlined in the Southeast regional administrative commercial penalty

- schedule
- Over the last two years there have been 4 reported observations of fishing in the closed areas resulting in 2 cases.

Outreach and Education

Gino Freselli - Enforcement Officer, Community Oriented Policing and Problem Solving

Questions on the agenda addressed during this section of the roundtable.

1. *What outreach activities are currently underway in Florida to inform the public and fishing constituencies about the presence and purpose of No-Fishing reserves?*
 - COPPS (Community Oriented Policing & Problem Solving). Establishes partnerships with government organizations, non-government organizations, and other stakeholders which have a common interest in order to get them involved in the decision-making process.
 - A regional program called the Southeast Atlantic Fish Extension Project is currently in progress. This project is in its early stages and will consist of about 4 journalistic style articles to present the history of MPAs, some case studies, views of the different stakeholders, and the scientific basis for MPAs. Chuck Jacoby, Florida Sea Grant will act as contact for this project. The project should be completed by September 2003.
 - Alabama had an enforcement outreach program called Coastwatch that worked in cooperation with groups interested in conservation. This is basically a type of neighborhood watch program. Volunteers have background checks run for violations, and are given a short course on how to observe activities for violations. The participants are given a 24-hour telephone number to call to reach enforcement officers. This could serve as a model for a similar Florida program.

2. *What options are available to increase outreach? What is the best method of delivery for the educational message?*
 - Stakeholders' newsletters
 - Media campaigns - Build a connection with Outdoor writers
 - Workshops and symposia
 - SARA – Scan, Analyze, Respond, and Assess. Analysis model used to develop customized response.
 - Town hall meetings
 - Use distribution lists of angler associations and conservation groups. – Promote ethical angling
 - Special events
 - Posters, brochures and newsletters
 - Train other trainers in order to multiply efforts to get the message out
 - Promotional items (key chains, Frisbees, etc.) that incorporate the national hotline number to report violations (1-800-853-1964)

- The message needs to be clear about the potential benefits of this management strategy
- In order to get people to change, a sense of urgency needs to be conveyed
- Be able to measure the impact on people

3. *What is the educational message?*

- Programs need to identify the target audience and the goals to be achieved
- Should also provide information on: Location of the MPAs, which fishing methods are legal and illegal, which species are included in the no-fishing regulations and which are not.

Findings and Recommendations

Compliance:

We are still unsure about the actual level of compliance with fishing regulations in Madison-Swanson and Steamboat Lumps Marine Protected Areas. To determine to effectiveness of these reserves for gag, it is important to get a handle on the level of compliance or non-compliance, and these closures must be in place for a sufficient length of time to have a population level effect.

Enforcement:

The major options for enforcement discussed were VMS and Radar. Before either of these options can be pursued a cost benefit analysis should be conducted and a long-term plan laid out for enforcement options. However, other options could be addressed to make these areas more enforceable: restrict all fishing within these areas and encourage “policing” by other boats.

Outreach and Education:

The recreational fishing population may not be aware of the existence of these reserves. In order to increase compliance and awareness an outreach/education plan should be developed. This campaign needs to have multiple levels, beginning with local awareness for particular areas but leading to a change in perception of MPAs and their overarching purpose. In order for the outreach plan to succeed it needs to include all the players, GMFMC, SeaGrant, OLE etc.

Suggested Actions for a Madison-Swanson and Steamboat Lumps Outreach Program

Publishing a brochure and poster about the Madison-Swanson reserve targeted toward fishermen in the local communities was the action outcome of the roundtable. Since the information is currently buried in the general regulation pamphlets, such a brochure should include:

- Who, what, when, where, and why
- A color map showing the closed areas
- The toll-free hotline number to report violations
- The brochure should be available on web sites as a PDF download;
- The brochure should be handed out with permit applications from the NMFS Regional Office
- Distribute the brochure with the new federal recreational HMS permits
- Distribute the brochure at the state level when anglers get their state fishing licenses

For more information please contact Beth Lumsden (Beth.Lumsden@NOAA.Gov)

Abbreviations Used in This Report

CCA	Coastal Conservation Association
COPPS	Community Oriented Policing & Problem Solving
GMFMC	Gulf of Mexico Fishery Management Council
HMS	Highly migratory species
MPA	Marine protected area
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
OLE	Office of Law Enforcement
RFSAP	Reef Fish Stock Assessment Panel
USCG	United States Coast Guard
VMS	Vessel monitoring system

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